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ABSTRACT

In response to a perceived need on the part of health professionals for acquiring better teaching skills, a 30-hour course called "Effective Patient Teaching" (EPT) was developed. The course focuses on interpersonal skills that establish bedside manner, essential teaching functions, delivery skills, and adherence counseling techniques. This study evaluated the influence of the course on real-world practice of 30 health professionals. Results indicated that dietitians who took the course changed their teaching performances immediately after completing it, but the improved teaching skills of EPT participants began to decline towards baseline after three months. The greatest improvement occurred in delivery skills scores. (JD)

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Improving the teaching skills of registered dietitians

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Improving the teaching skills of registered dietitians

Many patients possess serious deficits in their understanding and use of individually prescribed therapeutic diets (Christensen et al, 1983; Delamater et al, 1988; Lorenz, Christensen, Pichert, 1985), even after participation in an education program (Glanz, 1985; Hanson et al, 1986; Teza, Davis and Hiss, 1988). These and other data (e.g., Blackburn, 1977; West, 1973) indicate that the prevailing nutrition education process has not been very effective in influencing complex nutritional-behavioral outcomes, or the logical prerequisites: patient knowledge, recall of recommendations and skill (Bartlett, 1984; 1985).

We question the extent to which these problems might be a function of the quality of instruction being provided. Health care professionals (HCPs) do a lot of teaching. Unfortunately, most have not had any formal education in teaching, and many are not very effective as teachers of patients. For example, in our evaluations of nursing and medical students and practicing professionals, teaching skills showed substantial room for improvement (Lorenz, Pichert, Boswell, Jamison & Schlundt, 1987). Specifically, little time is actually spent instructing patients when time for teaching is examined directly (Pichert, Hanson, Pechmann, 1984; Pichert, Hanson, Pechmann, 1985). Perhaps more important, during the time available for instruction, HCPs often fail to utilize some fundamental educational principles that influence learning, retention and motivation. For example, we rarely observe practicing health care professionals clearly negotiating objectives, evaluating learning, giving specific feedback, using behavioral strategies to promote action, etc. (Lorenz, 1986).

Several surveys have revealed that although HCPs lack training in

teaching skills, a great many desire such instruction, and even prefer such instruction over more traditional content "updates" (Bille, 1981; Essig and Thielen, 1981). Until very recently, however, such instruction was not widely available or accessible to many HCPs.

In response to this need, a 30-hour course called "Effective Patient Teaching" (EPT) was developed for health professionals. Course time is equally divided between faculty-led lecture-discussions and videotaped "microteaching" exercises in which participants practice 20 teaching skills and receive immediate feedback on their performance. The teaching skills may be grouped into four subgroups: Those interpersonal skills that establish bedside manner, "essential teaching functions" , "delivery skills", and "adherence counseling techniques" (see Table 1 for a list of the individual teaching skills).

EPT has undergone preliminary laboratory testing with undergraduate medical and nursing students (Lorenz et al, 1987), and practicing health professionals (Boswell, et al, unpublished). Measurement of teaching skills is done by systematic evaluations from videotapes using a 20 point scale that has been found to be reliable. (Pichert, Smith and Crews, 1988). Teaching skills are evaluated by comparing the HCPs' behavior with operational definitions of each skill. Each skill is rated on a 4 point scale, where 0 = the no skill is not present, and 3 = excellent use of the skill.

Studies have shown that desired changes in health care professionals' teaching performances could be produced by participation in EPT. A study involving medical and nursing students showed that course participants obtained better learning in simulated patients than did HCPs who did not participate in EPT (Lorenz et al, in press). Our previous investigations

have found that EPT can produce desirable short-term, laboratory bound effects on HCPs, but it is unknown whether those effects translate to actual practice settings.

The purpose of the present study was to learn whether EPT influences real-world practice of one group of health professionals, practicing registered dietitians. The specific objectives of this study were to: 1). Evaluate Health Care Professionals teaching and interpersonal skills during routine patient education sessions in the field, 2) Evaluate the impact of an intervention aimed at improving HCPs' teaching skills, and 3) evaluate the persistence of any effect over three months.

Methods

Subjects.

30 staff dietitians (RDs) from 6 hospitals in a major southeastern city agreed to be randomly assigned to 2 groups. Half--the experimental group--participated in EPT, the control group did not. Stratified random assignment was employed in order to obtain approximately equal representation in experimental and control groups from each participating institution. Groups did not differ on age, sex (only one male), type of licensure, job title, years of experience, type of practice (in vs. outpatient; clinic or ward), graduate degrees, number of hours of patient teaching per week, number of hours worked per week, years since licensure, administrative support for teaching, or supervisor's attitude toward patient teaching.

Procedures.

RDs were videotaped interacting with one of tneir patients before randomization, and then one week, one month and three months following EPT. Two raters scored videotapes in random order after all had been collected.

Raters scored 20 operationally defined teaching behaviors on a 4 point scale (0 = absent, 3 = excellent use of the skill). For example, for the individual teaching skill, "statement of objectives", a "0" would be assigned if no statement of the session objectives were given. A "1" would be assigned if only a general statement was provided. A "2" would be assigned if the RD made a specific statement regarding objectives that was patient focused and/or included a rationale. A "3" would be assigned if the RD did all of the above and negotiated patient agreement with the objectives. Raters had been previously trained to agreement and demonstrated an overall reliability (interrater agreement) of .85 in a norming study (range across skills = .66-.97).

Results

Figure 1 displays the average teaching skills on all 20 skills measured. The repeated measures interaction term for condition x time was significant, showing improvement from baseline to follow-up assessments only for the experimental group ($p=.022$).

Post-hoc analyses indicated that the experimental and control groups did not differ on average total teaching skills scores at baseline (Exp = 0.987, Control = .984, $p>.50$), but differed at one week (1.48 vs 1.046) and one month (1.44 vs 0.966) after EPT. The experimental groups' scores were significantly higher than their baseline scores at these first two follow-ups. The two groups did not differ after three months (1.31, 1.07), and the experimental groups' scores were no longer significantly higher than baseline scores at the 3 month follow-up.

Figure 2 displays the average teaching skills representing Essential teaching functions. Experimental and control groups did not differ on average Essential teaching function scores at baseline (Exp = 1.02, Control

= .745, p>.50), and the experimental group consistently showed higher skill ratings at follow-up than the control group. However, the repeated measures interaction term for condition x time was not significant. The two groups' scores differed significantly at the first follow-up (one-week post EPT,1.38 vs .900) but not at the second (1.40 vs .568) and third (1.03 vs. .812) follow-ups. The experimental group did not show significant increases over their baseline teaching scores at any of the follow-ups.

Figure 3 displays the average teaching scores representing Delivery Skills. The repeated measures interaction term for condition x time was significant, showing improvement from baseline to follow-up assessments only for the experimental group (p=.019). Experimental and control groups did not differ on Delivery skills at baseline (Exp = .956, Control = 1.01, p>.50), but differed at one week (1.74 vs 1.18) and one month (1.64 vs 1.07) after EPT. The two groups did not differ at three months (1.53, 1.19) after EPT. The experimental groups' follow-up scores were significantly higher than their baseline scores at all 3 follow-ups. Participation in EPT appeared to significantly improve dietitians' delivery skills.

Figure 4 displays the average teaching skills representing Interpersonal skills, or "bedside manner". Both groups performed well on measures of bedside manner. Experimental and control groups did not differ on Essential teaching functions at baseline (Exp = 2.09, Control = 2.15, p>.50), or at one week (2.38 vs 2.20), one month (2.31 vs 2.20) or three months (2.24, 2.09). The repeated measures interaction term for condition x time was not significant.

Figure 5 displays the average teaching skills representing Adherence counseling techniques. The Health care professionals used adherence counseling techniques far less frequently than any other techniques, both

before and after EPT. Experimental and control groups did not differ on their adherence counseling skills at baseline (Exp = .200, Control = .288, $p>.50$), any of the follow-ups. (Scores at one week follow-up - .317 vs .083; one month follow-up - .367 vs .236; and three month follow-up - .400 vs .372). The repeated measures interaction term for condition x time was not significant.

To summarize the findings represented in figures 1 - 5: all groups performed well on elements of "bedside manner." Improvements in the experimental group occurred primarily among "delivery skills" and "essential teaching functions. Neither experimental nor control subjects ever manifested much use of adherence counseling strategies for helping patients comply with their therapeutic diets.

Discussion

This randomized, controlled study of the teaching skills of practicing registered dietitians during regularly scheduled interactions with patients indicates that at the baseline evaluation, there was significant room for improvement in the teaching skills of all study participants. Bedside manner was already at an adequate level. Group mean teaching skills scores were stable in the control group, over a period of more than 3 months.

Dietitians who took a continuing education course on "Effective Patient Teaching" changed their teaching performances immediately following the course while a control group not exposed to the course showed no changes in their teaching skills. Overall, the improved teaching skills of EPT participants persisted one month following the course, but by three months had begun to decline towards baseline. The greatest improvements occurred in delivery skills scores, which remained significantly higher than baseline scores at all three follow-ups. It appears that the current

form of EPT is more effective in influencing the delivery skills of participants than in influencing them to employ selected adherence counseling strategies.

This study is significant in demonstrating an effect of a continuing education course in the health care environment. Its significance is limited, however, by the relatively short-term nature of the investigation. In addition, the potentially reactive presence of videotaping equipment is unknown. Dietitians' performances should probably be considered "showcase" demonstrations. Even at that, there remains considerable room for continued improvement in teaching skills and substantial room for increased use of adherence counseling strategies. Finally, the study is significant because it suggests that teaching research and theory has had little impact on nutrition educators. We think that these findings are relevant to all types of health care professionals who are involved in patient teaching.

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Table 1. **Brief definitions of effective patient teaching skills**

Essential teaching functions:

Assessment: Obtaining information from the patient in order to learn how s/he may best be treated, educated or motivated.

Evaluation: An attempt to determine whether the patient has met the instructional objectives.

Feedback: Information given to patients regarding their performance; conveys approval or corrects errors.

Independent practice: An assignment for additional work without direct supervision by the professional.

Delivery skills:

Opening: An introduction which states the content and relevance of the session.

Statement of objectives: An indication of what the patient will be able to do or say as a result of the session.

Organizational clarity: The extent to which the professional clarifies the structure and sequence of instruction.

Stimulus variety: Use of more than one sensory channel and varying interaction style to meet an instructional objective.

Active learner involvement: Observable activity on the part of the patient, related to each instructional objective.

Highlighting: Use of any of several strategies for emphasizing the most important messages.

Visual aids: Use of materials to reinforce verbal presentation, or to clarify a difficult concept.

Closing: An ending which serves to summarize, review, or call for a specific future action.

Use of examples/demonstrations: Clarification of explanations using experiences already familiar to the patient, or by enacting a procedure.

Interpersonal skills:

Respect for the patient: Demonstration by word and action that the patient and family valued as persons, and as members of the health care team.

Vocal behavior: Use of voice to communicate interest, enthusiasm, emphasis.

Body language: Use of movement to reinforce verbal content, create a desired emotional climate, or gain attention.

Adherence counseling skills:

Formulation of a Behavioral Plan: Breaking a complex treatment regimen down into specific behavioral components for the patient to follow in order to meet the treatment goals. Specific behavioral steps are layed out in terms of who, what, when, where and how the patient is to achieve them.

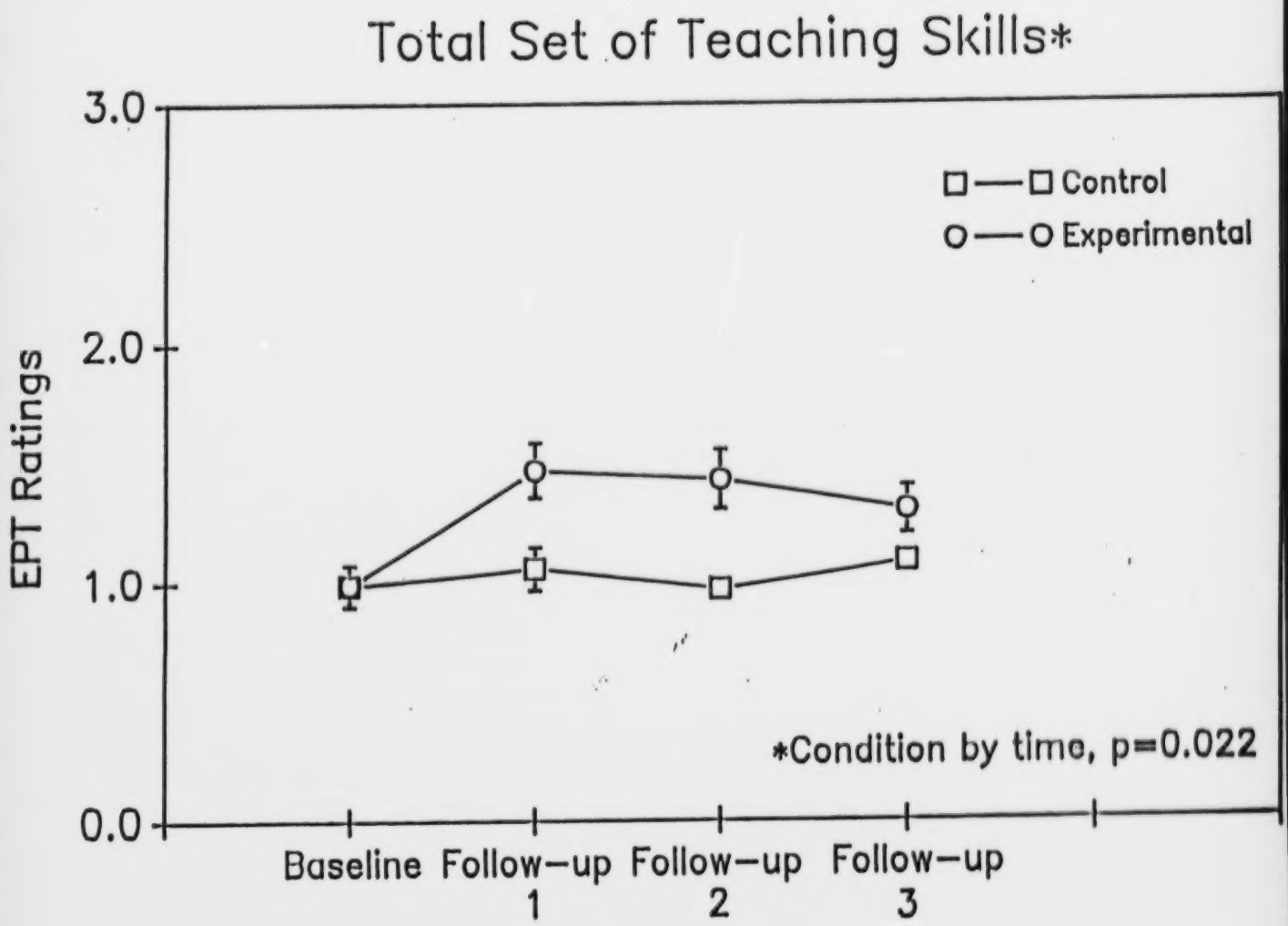
Negotiation of the Treatment Plan: The HCP attempts to involve the patient actively in designing a treatment plan that is best suited to the lifestyle and priorities of the patient.

Accountability: Providing some means for the patient to report the degree to which s/he followed some aspect(s) of the treatment plan; to encourage patient involvement and responsibility for learning new material or compliance with treatment instructions.

Behavioral techniques: Use of behavioral strategies to increase adherence to the treatment plan. Includes:

- altering the environment by using cues, or eliminating undesirable cues,
- behavior substitution (breaking associations between cues and undesirable behaviors, or substituting new behaviors for old behaviors that are interfering),
- clarifying the consequences of following or not following the treatment plan or clarifying priorities,
- reducing the response costs required to follow the treatment plan,
- shaping or graduating the treatment plan in small steps,
- anticipating and planning ahead for possible obstacles to adherence,
- referring the patient when appropriate

Figure 1.


Total Set of Teaching Skills*
3.0
2.0
1.0
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EPT Ratings
Control
Experimental
*Condition by time, p=0.022
Baseline
Follow-up 1
Follow-up 2
Follow-up 3

Figure 2.

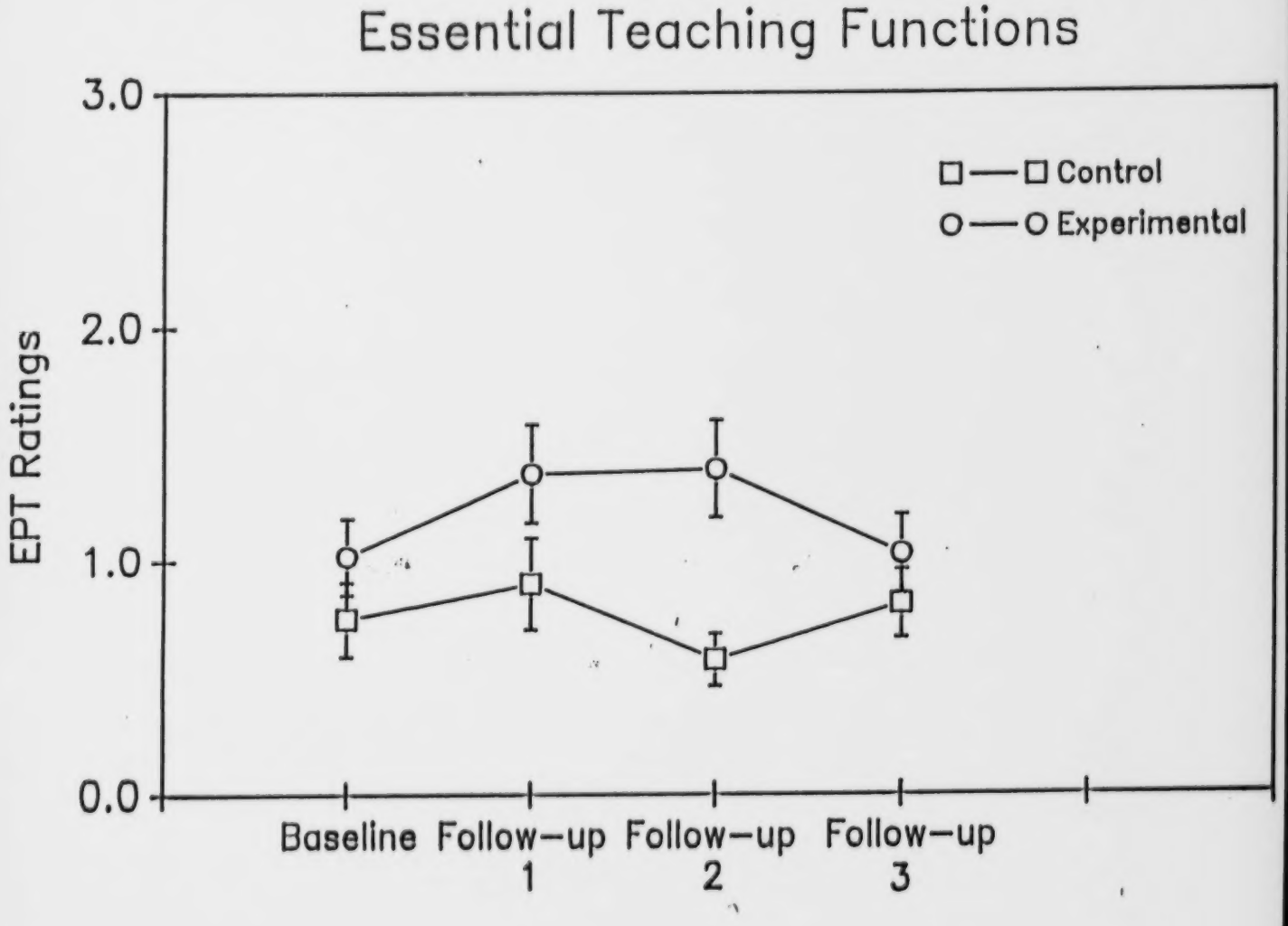
Essential Teaching Functions
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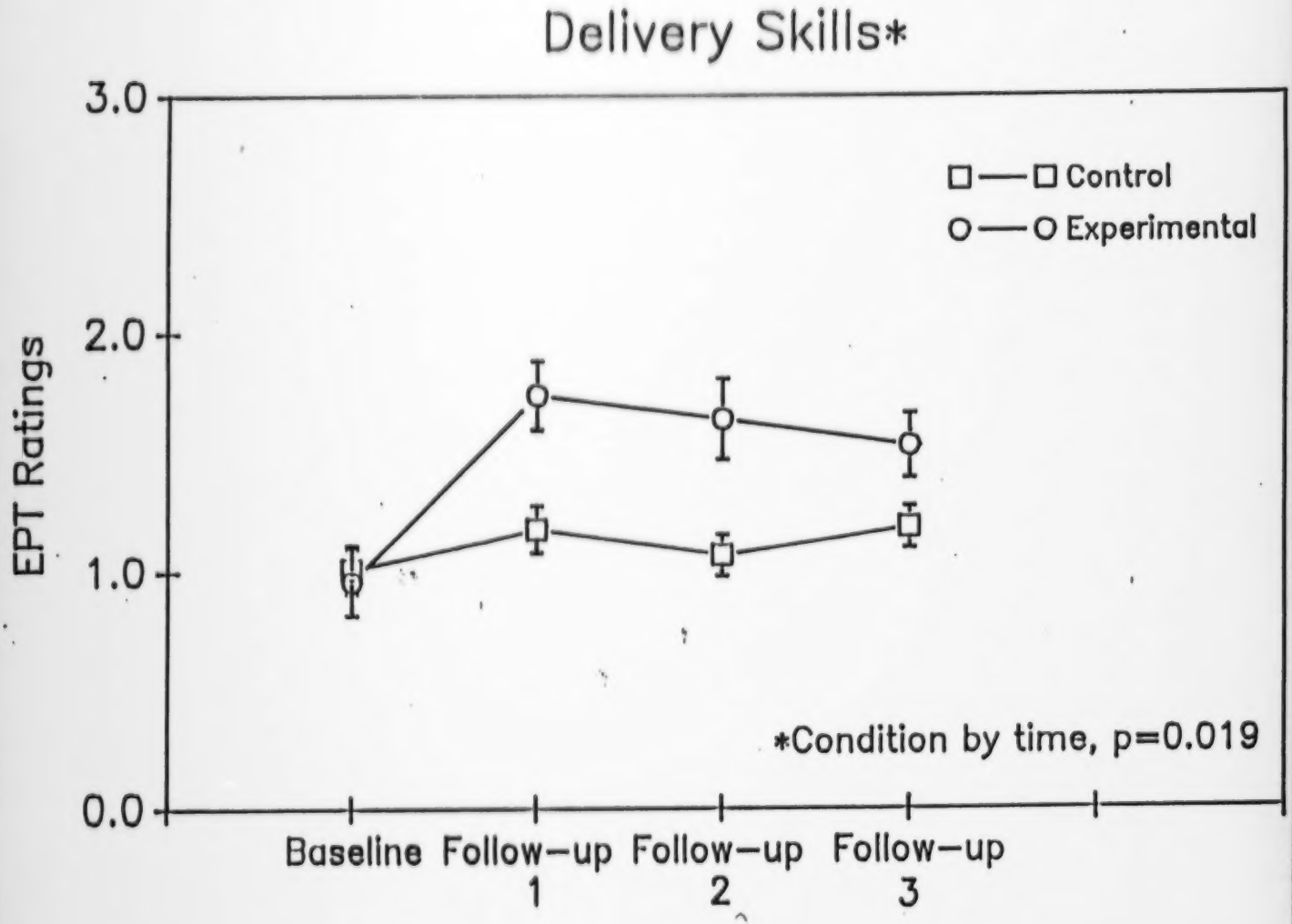
Figure 3.


Delivery Skills*
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Follow-up 1
Follow-up 2
Follow-up 3

Figure 4.

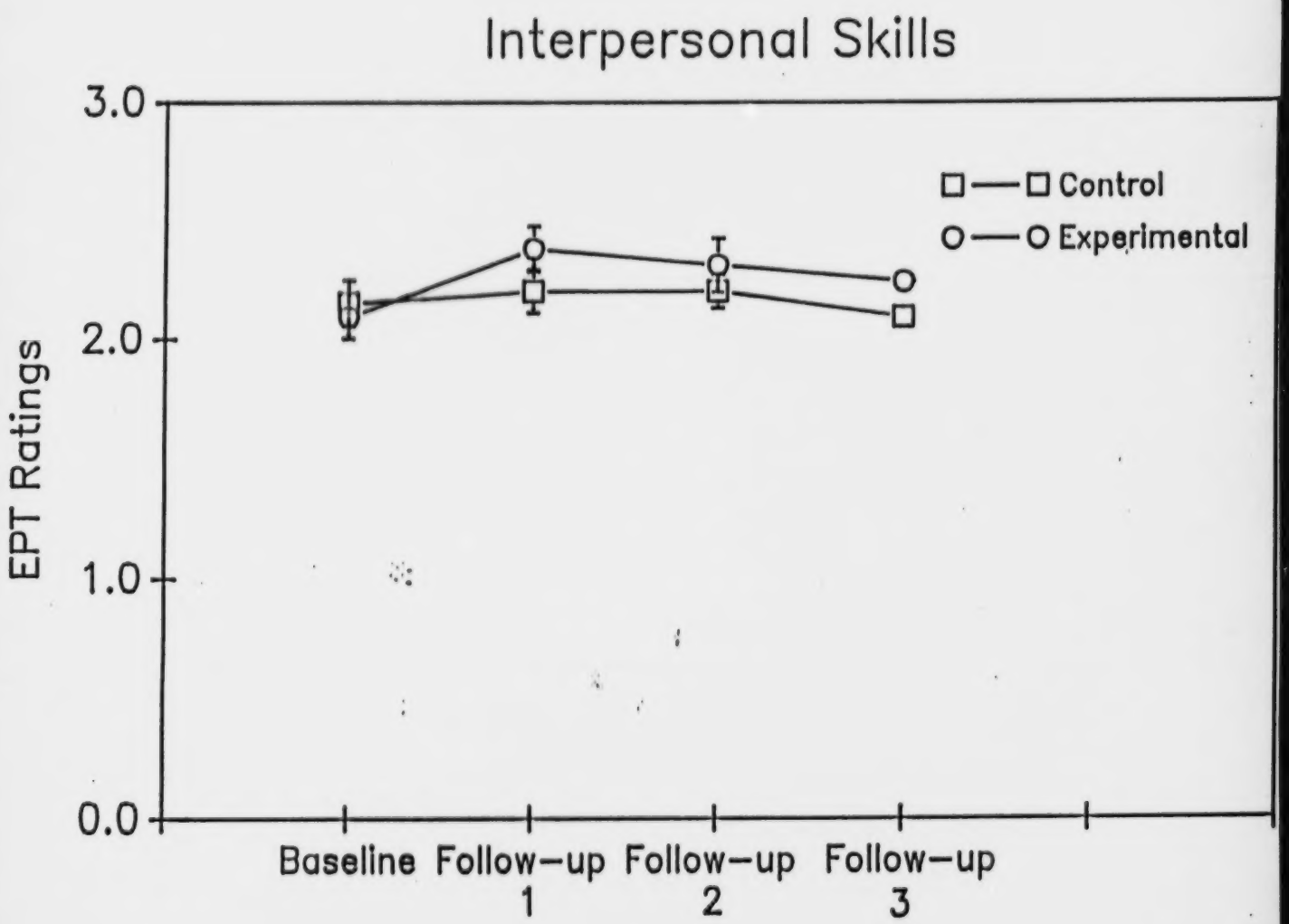
Interpersonal Skills
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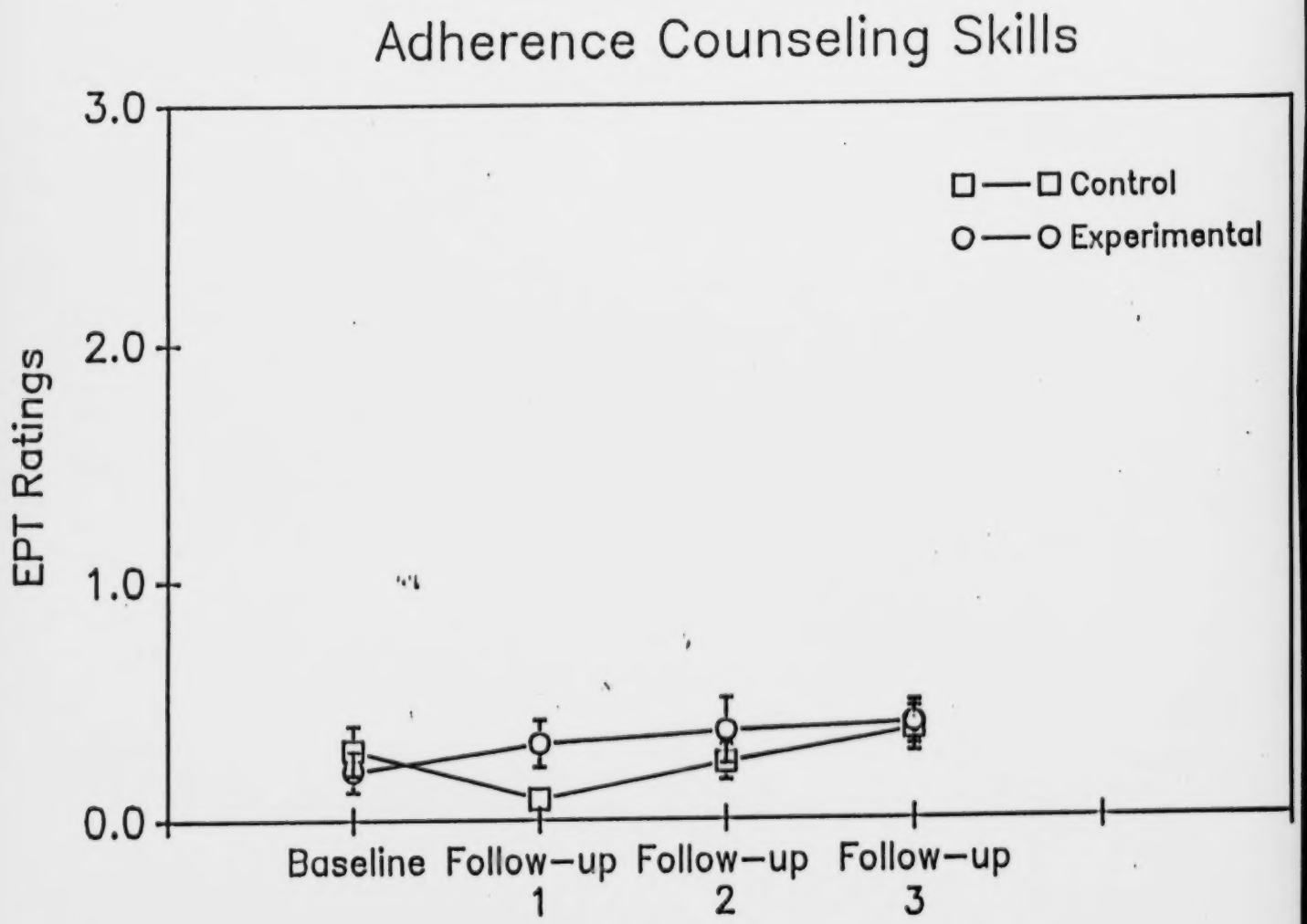
Figure 5.


Adherence Counseling Skills
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